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Environmental Analysis
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Tree Dis

FILE

June 11, 1998

Dan Bufford
Endangered Species Division
U.S. Fish and Wildlife Service
3310 El Camino Avenue, Suite 130
Sacramento, CA 95821

Subject: Pacific Shores Center, Corps File No. 16783S41, Amendment 2

Dear Dan:

As requested in our telephone conversation of June 11, the following additional conditions will be added to clarify and amend the February 1998 Mitigation and Monitoring Plan for the above referenced project. These issues address your request for leash requirements for dogs, mitigation for reduced project buffer, and acceptable landscaping trees.

Section 4.2.1 Buffer Zones and Screening (page 4-3 to 4-5). Appropriate language and/or additional signs will be added to the public access trail to remind trail and other open space users of leash requirements for dogs within open space areas.

Section 4.2.1 Buffer Zones and Screening (page 4-3 to 4-5) and Section 4.1 Goal of Mitigation (Page 4-2 and 4-3). As was discussed in our June 8, 1998 letter, we were only able to practicably provide an 85-foot buffer/setback between the trail and the adjacent salt ponds. The 15-foot difference between the available buffer and the requested 100-foot wide setback equates to approximately 1 acre. As mitigation for the reduced buffer, the applicant will provide 22 acres of compensatory wetland restoration as proposed in the mitigation plan. The additional 1 acre of mitigation is included within the proposed 22 acres and balances the impact and mitigation requirements resulting from the ratio calculation error on page 4-3. The revised calculation on page 4-2 and 4-3 will now read:

A 2:1 ratio is proposed for the fill/loss of 7.1 acres of potentially suitable salt marsh harvest mouse habitat (14.2 acres) and 1: 1 replacement is proposed for the 6.8 acres of the highly degraded wetlands Seaport Boulevard, the roadside ditch, the four outfall locations on non-native soil /fill material on the development site (6.8 acres), and the approximately 1 acre

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of land within the reduced width perimeter buffer between the site and adjacent salt ponds (1 acre)(22 acres total).

Section 4.4.2 Project Landscaping (pages 4-4 to 4-9).

Only high landscape suitability trees will be used for project landscaping. The following trees on the initial plant palette landscaping suitability index meet the Service's criteria based on your facsimile of June 11, 1998:

Acacia baileyana	*Cercis occidentalis*	*Crataegus phaenopyrum*
Feijoa sellowania	*Geijera parviflora*	*Melaleuca nesophila*
Schinus terebinthifolius	*Cycas revoluta*	

As we discussed, some of the Service's suitability changes were in response several apparent discrepancies in tree height between our source, *The Western Garden Book* and your source, *Hortis Third.* Herma Lichtenstein, the project landscape architect, indicated that *Hortis Third* provides information on tree height and growth under ideal conditions (i.e., in the tree's natural habitat/climate). The *Western Garden Book* on the other hand addresses the height and growth form on what is more normal for this region. Actual tree heights will likely be lower at the project site given the local wind and salt spray conditions at this site.

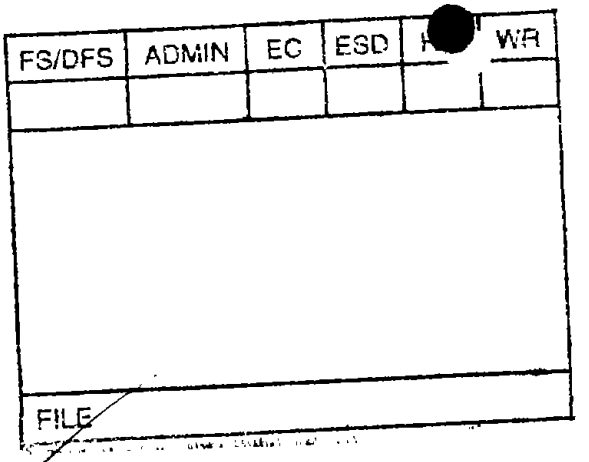
I believe this addresses the items we discussed. If you have any questions or wish to discuss other measures to address the setback issue, please feel free to contact me.

Sincerely,

LSA ASSOCIATES, INC.

Steve Foreman
Project Manager/Wildlife Biologist

cc Peter Brandon
John Sanger
Mark D'Avignon



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April 28, 1998

Dan Bufford
Endangered Species Division
U.S. Fish and Wildlife Service
3310 El Camino Avenue, Suite 130
Sacramento, CA 95821

Subject: Pacific Shores Center, Corps File No. 16783S41

Dear Dan:

Enclosed is the preliminary tree species plant palette for the Pacific Shores Center Project for your review. The plant list was initially supplied by Merrill and Befu, the project's landscape architectural firm. We have analyzed the list with respect to the landscaping suitability criteria described in Section 4.2.2 on pages 4-7 to 4-9 of the February 1988 Mitigation and Monitoring Plan. As described in the mitigation and monitoring plan, only trees falling into the moderate to high suitability index values would be used for project landscaping. High index value trees would be used for general landscaping. Moderate suitability trees would be used in specific locations such as the screening barrier on the western edge of the site where taller trees are required as mitigation for other environmental affects.

The applicant has also proposed to fund regular monitoring and to implement control measures to eliminate specific problems should such conditions arise in the future (see Section 4.2.3, pages 4-9 to 4-10 of the plan). If you have any questions or require additional information, please feel free to contact me.

Sincerely,

LSA ASSOCIATES, INC.

Steve Foreman
Project Manager/Wildlife Biologist

Enclosure

04/28/98(H:\STEVEF\FILES\PSC\BUFFORD1)

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Pacific Shores Center
Suitability Analysis for Preliminary Landscape Palette
Relative to Minimizing Raptor and Raven Nesting Suitability

Tree Species	Tree Characteristics[1]	Landscaping Suitability Index[2]
Acacia baileyana Bailey acacia	20-30 feet; round form; closed dense crown	High
Casuarina stricta Drooping she-oak	20-35 feet, oval to dome shaped crown, upright fine branches	Moderate to High
Casurina cunninghamiana River she-oak	to 70 feet:, oval to dome shaped crown; crown with large branches and openings	Low
Cedrus deodara Deodar cedar	to 80 feet; pyramidal crown, large horizontal limbs	Very Poor
Cercis occidentalis Western redbud	10 to 18 feet; irregular crown; small upright limbs	High
Cornus nuttallii Western dogwood	to 50 feet; irregular crown; small limb structure; some openings in canopy at maturity	Moderate
Cornus florida Eastern dogwood	to 20 feet; irregular shape with fine horizontal branches to 40'	High
Crataegus phaenopyrum Washington hawthorn	to 25 feet; fine limb structure, spreading crown	High
Cupaniopis anacardioides Carrot wood	to 40 feet; dome shaped form	Moderate
Cupresses arizonica (glabra) pyramidalis Arizona cypress	to 40 feet; oval, dense compact crown	High to Moderate
Cupresses sempervirens Italian cypress	to 60 feet; dense, narrow columnar form; upright fine branches to 80'	High
Eucalyptus citriodora lemon-scented gum	75 - 100 feet; irregular, open crown	Very Poor
Eucalyptus ficifolia Red flowering gum	to 40 feet; round-headed tree; compact crown	Moderate
Feijoa sellowiana Pineapple guava	18 to 25 feet; round to spreading form; dense crown	High
Fraxinus ornus "Raywood" Raywood ash	25 to 35 feet; compact, round headed crown; generally small narrow limbs to 60'	High
Geijera parviflora Australian willow	25 to 30 feet; dome shaped crown, with small upswept branches	High
Gleditsia triancanthos Moraine locust	35 to 70 feet; spreading, arching branches; open crown	Poor to Low
Koelreuteria paniculata Goldenrain tree	20 to 35 feet; spreading form with open branching crown	Low to Moderate
Laurus nobilis Sweet bay	12 to 40 feet; compact, broad-based , multistemmed cone-shaped crown	High

Tree Species	Tree Characteristics[1]	Landscaping Suitability Index[2]
Liquidambar formosa. Sweet gum	to 25 feet; generally dense cone to pyramidal shaped crown to 120'	High
Lyonothamnus floribundus Catalina ironwood	30 to 60 feet; 20 to 40 foot dome-shaped spread	Moderate
Melaleuca neophilia Pink melaleuca neosphila	15 to 20 feet, occasionally 30 feet; irregular to round dense crown; can develop heavy gnarled branches if unpruned; branches generally upright	High
Melaleuca quinquenervia Cajeput tree	20 to 40 feet; upright, open dome to round crown	Moderate to Low
Nyssa sylvatica Sour gum	30 to 50 feet, pyramidal when young to spreading at maturity; short horizontal branches	Poor
Olea europea European olive	25 to 30 feet; vase shaped;	Moderate to High
Pinus canariensis Canary island pine	60 to 80 feet; pyramidal when young to round crown at maturity; large open branches	Poor
Pittosporum crassifolium	to 25 feet; dense dome to round crown to 35'	High
Podocarpos gracilor Fern pine	to 60 feet; oval crown with heavy dense foliage	Low to Poor
Populus nigra Lombardy poplar	40 to 100 feet; dense columnar shape with upward reaching branches	Poor to Very Poor
Pyrus calleryana Bradford pear	25 to 50 feet; dense, round crown; horizontal branches	Moderate
Quercus agrifolia Coast live oak	20 to 70 feet, open round to spreading crown; large horizontal branches	Poor
Schinus terebinthifolius Pepper tree	to 30 feet; broad, umbrella-shaped crown; dense foliage	High
Ulmus parvifolia Chinese evergreen elm	40 to 60 feet; spreading with long, arching to weeping branches	Moderate to High
Umbellularia californica California bay	20 to 25 feet in cultivation; dense foliage trunk	Moderate to High (if kept low)
Cycas revoluta Sago palm	to 10 feet	High
Sygrus (Arecastrum) romanzoffianum Queen palm	to 50 feet; dense growth of feather-type fronds	Moderate
Washingtonia robusta Mexican fan palm	to 100 feet	Moderate to Poor

[1] **Source:** Sunset Western Garden Book. 1988. Lane Publishing Co., Menlo Park, California

[2] **Landscaping Suitability Index**
Trees must possess at least two of the specified characteristics in order to fall within a designated index value. All characteristics refer to trees at maturity. Trees with high landscaping suitability have low potential for raptor and raven nesting and roosting where as trees with poor or very poor landscaping index values have high potential for raven and raptor nesting and roosting.

High: 20 to 25 feet or less in height; columnar shape; preponderance of fine limbs; or closed dense crown structure.

Moderate: 25 to 50 feet in height; moderate arch in limb structure; or crown with openings consisting of 20 percent on the crown area.

Low: 50 to 70 feet in height; fairly horizontal limbs structure; limbs 3 to 5 inches in diameter at trunk; or crown openings of 20 to 30 percent.

Poor: 50 to 70 feet in height; fairly horizontal limb structure; limbs >8 inches in diameter at trunk at >50 feet in height; or 50 percent crown area open.

Very Poor: >70 feet in height; horizontal limb structure; limbs >8 inches in diameter at trunk at >50 feet in height; crown structure > 50 percent open; or good potential for sentinel perches>70 feet high from nearby trees.